



EXPLANATION

- Alluvium**  
(Sand, silt, and clay constituting the flood plain of the river and larger tributaries)
- Landslide**  
(Slumped till and bedrock)
- River terrace deposit**  
(mostly poorly sorted sand, gravel, and cobbles)
- Outwash channel deposits**  
Deposits in channels formed by glacial melt waters. (Qco) in most places consists of several feet of gravel, sand, or silt outwash. (Qc) consists chiefly of silt, and clay ranging in thickness from a few feet to a feather edge. Gradational contact between (Qco) and (Qc)
- Kame deposits**  
(Small mounds and ridges consisting of thinly bedded sand, silt, and minor amounts of gravel. Indistinct deposits not mapped.)
- Ground moraine**  
(Chiefly a stoney clay till, locally mantled by sand, silt, or clay deposited by glacial melt waters)
- Moraine on Coteau du Missouri**  
(Chiefly a stoney clay till and local accumulations of sand and gravel. Sand and gravel pits show location of known kame deposits in unit)
- Fort Union formation**  
(Tongue River member)  
(Beds of sandstone, shale, clay, and lignite. Tfu indicates patches of numerous exposures of bedrock. Remainder of area has Tfu underlying till. Bedrock exposures not shown in landslide (Ql) areas)
- Lignite bed intermittently exposed.** (Shown only in those parts of landslide (Ql) areas where landslide material thinly covers bed)
- Lignite bed not exposed but inferred to underlie till mantle at a shallow depth**
- Outline of channels other than outwash channels**  
(Contain little or no outwash, and are interpreted to have been formed by one or a combination of the following ways: (1) by melt waters coming from isolated ice masses, (2) by melt waters from heavy snow during periglacial conditions, (3) by seeping action of water originating from springs, (4) by normal post-glacial erosion. Where channels are coincident with outwash channels, their trend is shown by an intermittent stream pattern)
- Lake**
- Poorly drained area, intermittently marshy.** Many small areas on the moraine on Coteau du Missouri not shown
- Intermittent stream**
- Spring**
- lignite mine, shaft**
- lignite mine, tunnel** In places one symbol represents more than one mine opening
- Inactive lignite mine, strip pit**
- Sand and gravel pit**
- County boundary**
- Section line**
- Primitive road, ungraded or graded but not maintained**
- Graded road**
- Graded and gravelled road, state highway shown by circled number**
- Black top surfaced federal highway**
- House**
- Farm buildings other than house (not shown where house is present)**
- School**
- Church**
- Cemetery**
- Low dam or dike**
- Bench mark showing altitude, approximate location**
- Contact**
- Contact, approximate**
- Contact, inferred**

Recent  
Pleistocene Stage  
Late Wisconsin  
Tertiary  
Palaocene

Base compiled from General Land Office township plats and Geological Survey transit traverse control

Geology mapped in 1946 by Richard W. Lemke, assisted by Fred S. Jensen and Roy O. Jackson; mapped in part by Clifford A. Kaye

PRELIMINARY  
GEOLOGIC MAP OF THE KENMARE QUADRANGLE, NORTH DAKOTA



U. S. Geological Survey  
OPEN FILE REPORT  
This map is preliminary and has not been edited or reviewed for conformity with Geological Survey standards or nomenclature.